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THE FARM INDEX

November 1968

**Our Legacy of
Land and Water**

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U.S.
Department
of Agriculture
Economic
Research
Service



OUR LEGACY OF LAND AND WATER

THE AGRICULTURAL OUTLOOK

On top of last year's record harvest, farmers expect another one. Total crop prospects are up over last year even though the "all crop production index has declined slightly since September. The dry weather in the Atlantic States lowered prospective yields for late fields somewhat. But killing frosts in the North held off until after October 1.

Cattle feeders plan to step up fall marketings 7 percent. This follows a similar increase this summer over a year earlier. The large number of lightweight cattle on feed on October 1, 1968, suggests continued large marketings next winter.

Consumer demand for beef has grown this year. Fed cattle prices strengthened during the summer even though marketings out of feedlots were considerably larger than a year ago. However, fed cattle prices are expected to weaken somewhat late this year as marketings continue to increase.

Hog prices curvier than a pig's tail. Averaging above last year this fall, prices paid to hog producers are likely to drop below year-earlier levels in the winter. Commercial pork output the first 8 months of 1968 was 4 percent over a year earlier while hog prices averaged 4 percent lower.

Unfrozen, unhurricane-damaged, 1968/69 citrus crop looks good. If weather continues to cooperate as it had through mid-October, a 31-percent overall increase over 1967/68 is in sight. This preliminary estimate does not include California's late season oranges, grapefruit, and lemons, however. Total Texas production is likely to more than double last year's hurricane-ravaged crop. California's Navel oranges are also expected to nearly double last year's crop when freezes caused extensive damage.

Tobacco supply level will be lower for fourth

straight year. Smaller crops and carryovers this year will probably reduce total tobacco supplies around 4 percent from last season. The supply for 1968/69 is estimated at 5.9 billion pounds. Reduced acreage and yields are expected to put this year's crop 11 percent below last year's in size.

Previously favorable prices help to send '68 soybean crop over the top. Soybean supplies are up again for the fifth straight year. At 1,066 million bushels, this year's crop is 10 percent larger than 1967's crop—three times the size of 1950's. Favorable prices last year encouraged a 3-percent increase in harvested acreage. And at an average of 26 bushels, the yield per acre expected this year will set a new record. It is likely, however, that farm prices for the bean will still average near last year's levels, which were around the support rate of \$2.50 per bushel effective this year.

Peanuts pushing a record. At a prospective 2,485 million pounds, the 1968 peanut crop will top last year's crop by a small amount to reach a record high. If current prospects materialize, this year's output will be 18 percent higher than average.

Earnings of the farmer's hired hand are up this year. His (or her) salary as of October 1 was up to an average cash rate per hour of \$1.41. That made it 9 percent above what it was on the same date of 1967, and 66 percent over the 1957-59 average.

Soviet grain production up. As currently estimated by the USDA, the Soviet Union's grain crop, including pulses, will reach 127 million metric tons this year. The 1967 harvest was estimated at 125 million metric tons. By volume, Soviet wheat alone is expected to contribute 2.5 billion bushels to this year's grain output, compared with an estimated 2.3 billion bushels last year. (U.S. all wheat production in 1968 is expected to hit 1.6 billion bushels.)

Don't look for a Farm Index Outlook Issue this year. The USDA's National Agricultural Outlook Conference has been rescheduled from this month (November) to February 17-19, 1969. The Farm Index Annual Outlook Issue will appear at that time.



ITEMIZING INCOME

How much do farmers—and others with farm receipts—earn from farming? From nonfarm sources? Here is an itemized account, based upon recent tax returns.

Who earns money from farming?

Farmers do, obviously. But there are other people who report farm earnings on their income tax returns who don't spend their full time farming.

Joe Doe is one of these. He's a full-time factory worker. But in the evenings and on weekends, he's a farmer.

Bill Brown is retired. He lives in town, but every fall he gets a check for grain sold from farmland he owns—and once farmed himself.

And then there's John Smith. He owns and operates a feed store, but he's an unseen partner in a nearby farm operation.

To get a look at the incomes of people who report any farm earnings on their tax returns, ERS economists studied data compiled by the Internal Revenue Service

from 1963 returns. This was the latest year for which complete data were available.

The focus of the study was on the income of individuals, not farms. As such, the income figures are not directly comparable to the regular USDA Farm Income series. Not all of the individuals were farmers. Many had simply retained or inherited a financial interest in farming. Others owned farmland or invested in farming.

Most of the returns were filed by individual proprietors and their wives. (This group included farm operators, farm landlords, and informal partners.) Partnerships accounted for fewer than 4 percent of the returns; corporations for less than 1 percent.

Here are some of the study highlights:

Four-fifths of the persons who reported farm receipts also earned some money off the farm. For nearly half of these, nonfarm income made up 80 percent or more of their total income.

Wages and salaries were generally the No. 1 source of such

earnings. They were reported on half of the returns and averaged \$4,430 in 1963.

Since farm and off-farm jobs are competitive in the use of a person's time, large wage and salary earnings were reported less often by individuals whose farm profits were big enough to indicate they were farming full-time and making a go of it.

Wage and salary income was relatively more important to individuals whose reported farm profits or losses were small. However, many with small profits or losses did not have off-farm work.

About a third of the returns—including the earnings of husbands and wives whose farm profits totaled \$1,200 to \$4,999—in 1963 showed some wages and salaries earned off the farm. Generally such income wasn't large. But it supplemented their farm receipts to the tune of \$2,000-plus—helping them maintain a satisfactory level of living.

When reported farm profits were less than \$1,200, the \$3,000 in funds averaged in off-farm wages and salaries was clearly the

OFF-FARM EARNINGS BOLSTER INCOMES OF INDIVIDUALS WITH FARM RECEIPTS

Averages for persons reporting:	FARM PROFITS OF:						FARM LOSSES OF:					
	\$10,000 or more	\$5,000-9,999	\$1,200-4,999	\$400-1,199	\$100-399	Less than \$100	Less than \$100	\$100-399	\$400-1,199	\$1,200-4,999	\$5,000-9,999	\$10,000 or more
	Dollars						Dollars					
Farm receipts	60,450	26,660	11,820	5,100	3,270	2,660	2,690	2,840	3,390	6,540	16,190	55,220
Net farm profits	16,150	6,670	2,570	770	260	50	—	—	—	—	—	—
Net farm losses	—	—	—	—	—	—	56	240	740	2,260	6,910	22,750
Off-farm and other income ¹												
Wages and salaries	2,640	2,030	2,360	3,250	3,760	4,460	4,540	5,100	5,480	6,480	9,030	19,300
Dividends	2,880	990	730	820	860	830	1,000	1,100	1,280	2,300	7,590	27,500
Interest	1,130	640	460	390	400	450	420	420	440	660	1,450	2,930
Nonfarm businesses:												
Proprietorships	— 180	1,360	2,000	1,960	2,060	2,040	2,080	2,610	3,060	5,310	7,750	9,740
Partnerships	1,610	2,070	1,860	2,250	3,130	3,010	4,850	3,870	4,910	5,020	7,450	8,490
Other ²	2,190	810	580	500	530	520	500	600	660	1,320	4,290	19,320

¹ Average amounts are for those who reported each type of income. ² Includes net gain or losses from sales of farm and nonfarm assets, rents, royalties, pensions and annuities that are taxed, sales of depreciable property, estates and trusts, and other miscellaneous income.

most important part of total incomes. Judging from the size of farm receipts, many persons were part-time farmers or landlords.

On tax returns showing farm losses up to \$5,000, off-farm wages and salaries frequently topped farm business receipts.

Clearly many of these individuals had full-time off-farm jobs. Some only supplemented their off-farm income with farm earnings in good years.

When farm business losses ran to \$5,000 or more, off-farm receipts generally were substantial. Fewer persons in this group reported wage and salary earnings. But when they did, such earnings were high enough to suggest that these taxpayers held managerial positions.

Slightly more than one-tenth of the returns showed dividends from nonfarm investments. Generally, these were reported most often and were largest for individuals with the largest farm losses or off-farm incomes.

Income from miscellaneous sources was reported by two-thirds of the taxpayers. Such income (which includes capital gains from the sale of farm and nonfarm assets, rents, royalties, pensions, and annuities) was largest for persons reporting large off-farm incomes.

More than a million individuals, about a third of those with farm income, were classed as poor when taxable income from farm and off-farm sources was combined.

On the average, this group grossed \$5,590 from farming but had little net income. Only about a fourth reported any wage or salary earnings from off-farm jobs. When they did, such earnings were low, about \$830, suggesting most had only part-time wage work.

Of course, some of those classed as poor received social security payments, pensions, or other non-taxable income which made up for at least a part of the income gap. (1)

Income Was on the Upswing For Many Commercial Farmers in '67

For many of the Nation's commercial farmers, 1967 was a good year in terms of net farm income.

On 22 important types of commercial farms, net incomes gained over 1966. The increases ranged from 1 to 27 percent; nine of the farm types enjoyed gains of more than 20 percent.

Generally it was increased farm production, or higher farm prices, or a combination of both which sparked the upward surge in net farm earnings.

All of the dairy farm types studied, all of the cotton farms, and all of the tobacco farms shared in the '67 income gains.

For 10 types of commercial farms, however, net incomes dropped below 1966 levels. In four cases, the declines totaled more than 20 percent. These four were:

Hog-beef raising farms in the

EARNINGS WERE UP ON MOST TYPES OF COMMERCIAL FARMS DURING 1967

Type of farm and location	Change from 1966				Net farm income	
	Production	Prices received	Prices paid	Net farm income	1967	1961-65 average
	Percent				Dollars	
Dairy farms:						
Grade A						
Central Northeast	+7	+5	0	+24	7,900	4,146
Eastern Wisconsin	+8	+2	+4	+7	10,114	6,478
Grade B, Western Wisconsin	+10	-3	+4	+1	6,635	4,272
Egg producing farms, New Jersey	+18	-25	0	-87	1,113	3,292
Broiler farms:						
Maine	+12	0	+6	+9	4,191	3,148
Delmarva	+41	-12	+2	+27	8,347	6,594
Georgia	+11	-11	-34	-9	1,724	946
Corn Belt farms:						
Hog-beef raising	+12	-15	+4	-26	6,077	4,731
Hog-beef fattening	+8	-3	+6	-18	11,649	10,803
Cash grain	+33	-17	+6	-6	13,902	12,866
Cotton farms:						
Nonirrigated						
Mississippi Delta	-12	+9	+8	+2	37,761	33,738
High Plains, Texas	-6	+11	+4	+13	15,885	8,962
Irrigated						
High Plains, Texas	+3	+9	+4	+22	22,140	17,188
San Joaquin Valley, California	-6	+14	+3	+24	31,389	28,968
Tobacco farms:						
North Carolina Coastal Plain	+15	-10	+5	+4	6,421	6,195
Kentucky Bluegrass						
Tobacco-livestock, Inner area	-1	+3	+4	+2	10,256	7,950
Tobacco-dairy, Intermediate area	+3	+6	+3	+12	3,989	2,979
Tobacco-dairy, Outer area	+6	+5	+4	+13	7,655	5,612
Pennyroyal area, Kentucky-Tennessee						
Tobacco-beef	+32	-8	+3	+21	8,183	5,665
Tobacco-dairy	+33	-2	+3	+23	9,235	5,800
Spring wheat farms:						
Northern Plains						
Wheat-small grain-livestock	+11	-5	+4	-3	7,489	7,595
Wheat-corn-livestock	+27	-7	+2	+10	12,887	8,481
Wheat-fallow	-39	-5	+5	-31	8,136	7,770
Winter wheat farms:						
Southern Plains						
Wheat	+18	-12	+7	-2	10,695	10,487
Wheat-grain sorghum	+53	-10	+7	+22	15,330	10,127
Pacific Northwest						
Wheat-pea	+19	-7	+5	+4	24,223	16,074
Wheat-fallow	+23	-9	+3	+6	23,388	14,319
Cattle ranches:						
Northern Plains	+20	-2	+2	+21	9,108	6,911
Northern Rocky Mountain	+8	0	+8	+4	19,065	13,838
Southwest	-3	+2	+4	-13	6,312	5,709
Sheep ranches:						
Utah-Nevada	+9	+4	+3	+26	18,853	11,090
Southwest	-28	+3	+5	-39	7,216	7,188

Corn Belt, where lower prices received and higher prices for purchased inputs resulted in a 26-percent drop.

Northern Plains wheat-fallow farms and *Southwest sheep ranches*, where drought sharply curtailed the volume of products for sale and resulted in declines in net farm income of 31 and 39 percent, respectively.

New Jersey egg producers, who received sharply lower prices for their eggs and ended up with 87 percent less income than in 1966 (an unusually good year) and only about a third of what they averaged during the 1961-65 period.

Total net income for all farms in our 50 States added up to \$14.6 billion, about \$1.5 billion less than in 1966. Per farm, earnings were about \$4,654, compared with \$4,967 in 1966. Last year's drop of 6 percent in income per farm was the result of a reduction of about 3 percent in the number of farms and a drop of 9 percent in total net farm income. (2)

Decline in Cow Numbers Slows; Nevada Herds Even Show a Gain

Dairy farmers don't have to "wait till the cows come home" to see the rate of decline in cow numbers slow down. It's happening now.

Cow numbers are down this year as they have been for several years in a row, but . . .

The rate of decline has slackened each year since 1966 when rate of decline reached a peak of 6 percent.

In June, milk cows on U.S. farms numbered 13.1 million head, down only 3.5 percent from the 13.5 million recorded in June a year earlier.

All regions except the South Atlantic and Western States showed a slackening in the rate

of decline in cow numbers.

The State of Nevada, in fact, showed an increase in milk cows this June over a year earlier. It was the only State to show an increase.

The overall drop, however, ranged from 5 percent in the West North Central Region to 2 percent in the West.

Helping to slow the sale and culling of cow herds were:

Improved milk prices, ample supplies of roughage, and lower feed grain costs.

These offset the rising beef cattle prices which encourage the sale of milk cows and the culling of dairy herds.

The year-to-year decline in cow numbers during the remainder of 1968 is likely to hold below the 3.5 percent recorded for June 1968. (3)

Dixie Decrease

Two billion man-hours or 42 percent—that's how much labor requirements declined in southern agriculture between 1956 and 1966.

The Delta States and the Southern Plains experienced the most dramatic decreases—down about 47 and 44 percent, respectively. The reductions reflect, in part, the relative importance of cotton in these areas. Cotton acreage has been reduced and production has almost completely mechanized.

Labor needs dropped by about 41 percent in the Appalachian States and 37 percent in the Southeast during the period. While both areas are affected by trends in cotton production, tobacco is a more important crop. And so far, there has been no appreciable reduction in tobacco's labor requirements.

Projections for 1980 indicate a further decline of about 39 percent in the labor needed for farming in the South. Again, the greatest decrease is projected for the Delta States (about 44 percent), followed by reductions of 40 percent in the Southern Plains, 39 percent in Appalachian States, and 34 percent in the Southeast. (4)

Corn Belt Still Soybean Center; South Central's Acreage Swells

At nearly a billion bushels, U.S. soybean output in 1967 was up almost 400 percent from the average annual output during the 1940's.

Acreage, too, has risen over the years—from a range of 10 million to 12 million acres during 1942-49 to about 40 million acres last year.

The Corn Belt is still the center of soybean production in the United States.

Illinois, Iowa, Indiana, Missouri, Ohio, and Minnesota together accounted for about three-fifths of harvested acreage in 1967.

The Corn Belt's share of total acreage, however, has slipped since the late 1940's, when the region had 86 percent of total harvested acreage.

Gaining in importance, meanwhile, were two South Central States—Arkansas and Mississippi.

In the past 20 years, soybean acreage in these States has risen 1,613 percent—from 0.4 million acres in 1945-49 to 6.2 million last year.

Arkansas and Mississippi together accounted for about 15 percent of total harvested U.S. soybean acreage in 1967.

Why the regional shift in soybean production?

In the Corn Belt, soybeans are a good No. 2 crop, but in most areas they just don't produce the income possible from corn. And soybean yields have not increased as fast as corn yields in recent years. Hence, in the heart of the Corn Belt, soybeans must play second fiddle.

In the South Central States, soybeans were introduced initially to take up the slack as cotton acreage declined during the 1950's. Though cotton acreage in

these States has held fairly constant during the 1960's, soybean acreage has continued to increase. Obviously, once welcomed, soybeans have stayed on to replace other crops in this area.

Introduction of new varieties which mature in a shorter growing season, have helped soybeans move north, too.

Actually, Minnesota has expanded its soybean acreage faster than the Corn Belt States have, in general. (5)

Porker Price Rise Not Likely If Production Trend Continues

The number of pigs born in the Corn Belt during June-November 1968 is likely to be about 4 percent over a year earlier.

This increase would be more than adequate to offset the needs of our growing population. Thus, by early 1969, barrows and gilts—after bringing higher prices this summer—are likely to be selling at or under year-earlier levels. Generally rising incomes will be a price supporting factor, however.

Corn Belt producers indicated a 4-percent increase in sows farrowing this winter. Pigs born this winter and spring will provide slaughter supplies for the latter part of next year. As a result, hog slaughter is expected to average above year-earlier levels through most of 1969.

The hog-corn price ratio—indicative of the price incentive to raise hogs—ranged from 16 to 18 during the first half of 1968. Then it rose above 19 during the summer and in September hit a 19.3 average—a record for that month.

Despite the peak hog-corn price ratios, however, hog production has not returned to the levels it achieved during the late 1950's when the ratio averaged near 15. (17)



Men and Milestones

THE RIGHT MAN IN THE RIGHT PLACE

In the 1830's pests and worn-out land drastically reduced crop yields on farms up and down the East Coast. Horace Capron, a successful mill manager, tries out new equipment, irrigation, fertilizer, and crop rotation on a model farm he has created on his Maryland estate. The results astound farmers around the world.

* * *

Horace Capron was proud of the 130 to 150 gallons of milk his herd of 60 dairy cows produced daily. And his customers were impressed by Capron's emphasis on cleanliness and his unusual system of cooling the milk, which made for healthier cows and better milk.

Visitors marveled at his lush hayfields that yielded 1½ to 2 tons of timothy and clover per acre, and his wheatfields that yielded 35 to 40 bushels per acre—compared with neighbors puny 5-bushel yields.

His farm experiments and bumper yields gained world renown in 1847 when the *American Farmer* published a series of articles entitled "On the Renovation of Worn-Out Soils."

Replacing first Agriculture Commissioner, Isaac Newton, on Dec. 3, 1867, he continued his predecessor's progressive policies. As Commissioner he was, according to one contemporary editor, "the right man in the right place."

In 1871 Capron resigned to become advisor to the Japanese Government and head of an agricultural mission that introduced modern American farming methods, implements, crops, and livestock to the island of Hokkaido.

In addition to his articles for the *American Farmer*, Capron's most important writings include "Reports and Official Letters to the Kaitakushi," documenting his activities in Hokkaido. (6)

OUR
LEGACY OF
LAND
AND
WATER

Where
the
land
is

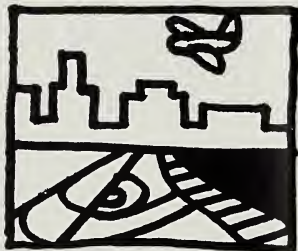
1.5%

in national defense, flood control, Federal industrial, and State institutional areas



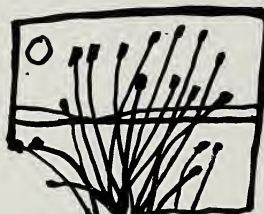
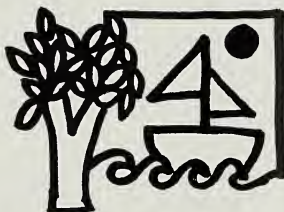
2.8%

in urban and town areas; farmsteads and farm roads; highway, road, and railroad rights-of-way; airports



3.4%

in national and State parks and wildlife refuges



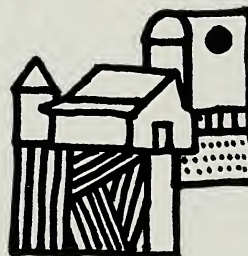
12.2%

in marshes, open swamps, bare rock areas, deserts, tundra, and so forth



22.4%

in forestland not grazed



57.8%

in agricultural production (cropland, 19.6%; grassland pasture and range, 28.3%; and forestland grazed, 9.9%)

There are 2,266 million acres of land in our 50 States. On this acreage we house, feed and clothe a population of some 200 million people—and produce still other items for export abroad.

Actually housing doesn't take up much room. All the farmsteads and farm roads in the United States could fit into 0.4 percent of our total land area. And our cities and towns, our airports, highways, roads, and railroads cover only a little more than 2 percent of our land.

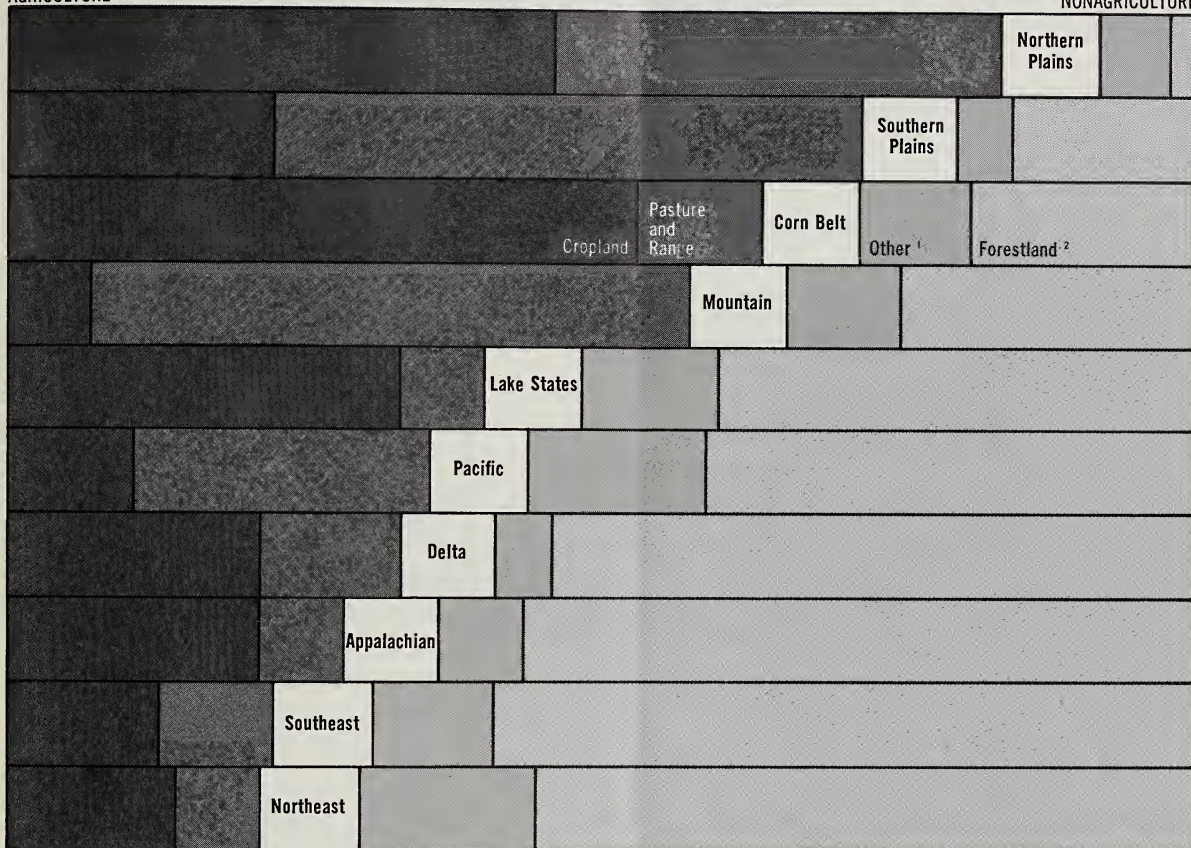
Feeding and clothing our population requires 20 times more land than is needed for urban uses and transportation. Land used for agricultural production—cropland, grassland pasture, and forested grazing land—covers three-fifths of total acreage.

Only about a fifth of our Nation's land is ungrazed forestland. A tenth is desert, swamp, tundra, or other land with limited surface use. And 5 percent is reserved for recreation, wildlife, or public installations and facilities.

...and who
or what
uses it

AGRICULTURE

NONAGRICULTURE



¹ Includes some forested grazing land.

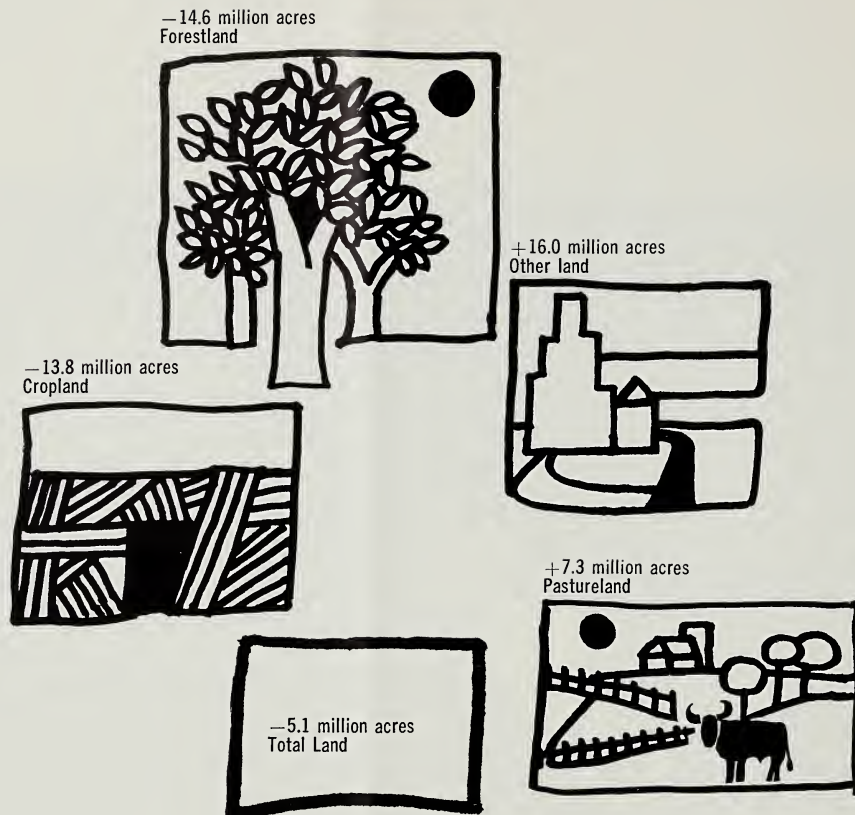
² Includes urban and town areas; farmsteads, farm roads, and lanes; highway and railroad rights-of-way; airports; national and State parks; wildlife refuges; national defense areas; flood control areas; and miscellaneous land such as marshes, open swamps, bare rock, deserts, and other land with low value for agricultural purposes.

Agriculture is by far the biggest user of land in the central regions of our Nation.

Cropland and pasture cover more than nine-tenths of the land area in the Northern Plains, more than three-fourths of the Southern Plains.

Go east—and only about a fourth to a third of the three eastern regions' land is devoted to crops and livestock. But trees, not cities, cover most of the terrain. Generally, about two-thirds of the land in these regions is forested.

land uses change



Land usage isn't static. Look at the changes that occurred between 1959 and 1964.

Much of the land once used for crops is now being used for grazing livestock, although some has also shifted into intensive special uses such as cities and highways.

The forestland, however, is still wooded to a large extent. While about 14.6 million acres were withdrawn from commercial usage between 1959 and 1964, most of this land was set aside for parks, wildlife refuges, flood control, and other extensive public uses.

The gain in "other" land, about 16.0 million acres, was largely in recreation and wildlife areas.

Some 14.0 million acres (10 million of which

were in Alaska) were shifted into these uses during the period.

Cities covered only 2.1 million more acres in 1964 than in 1959, while the acreage in transportation areas and in public installations and facilities each expanded by 0.8 million acres.

There was roughly a 1-million-acre drop in the area in farmsteads and farm roads and in wasteland.

In all, our Nation's land area shrank by nearly 5.1 million acres during 1959-64. Much of this land simply vanished under water, as the size of artificial reservoirs increased. However, changes in methods of area measurement and revisions for Alaska also accounted for part of the drop.

REGIONAL SHIFTS IN LAND USAGE DURING 1959-64

Region	Cropland	Grassland pasture and range	Forestland	Other	Total
<i>1,000 acres</i>					
Northeast	— 1,800	— 889	+ 2,573	+ 15	— 101
Lake States	— 525	+ 219	— 447	+ 10	— 743
Corn Belt	— 340	—1,471	— 746	+ 2,052	— 55
Northern Plains	— 2,211	+ 932	— 1,088	+ 1,931	— 436
Appalachian	— 1,107	—2,206	+ 3,826	— 888	— 375
Southeast	— 2,191	—1,375	+ 1,464	+ 1,851	— 251
Delta States	— 570	+ 75	+ 622	— 217	— 90
Southern Plains	— 4,470	+9,139	— 4,989	+ 465	+ 145
Mountain States	+ 215	+1,567	— 3,354	+ 1,369	— 203
Pacific	— 683	+ 342	+ 4	+ 259	— 78
Alaska	0	+ 422	—12,274	+ 8,888	—2,964
Hawaii	— 129	+ 557	— 204	— 143	+ 81
Total U.S.	—13,811	+7,312	—14,613	+16,042	—5,070

... but so do farmer's needs

Thanks to modern technology, farmers now require less land to produce more abundant crops.

Crop output per acre was 14 percent higher in 1964 than in 1959—and farmers used 23 million fewer acres in crop production.

Technological advances have prompted farmers to concentrate crop production on fertile and more nearly level areas—and to shift hilly, eroded, or less productive land to grazing uses or trees.

Farmers are also using their cropland in different ways. They're harvesting fewer acres—only 292 million in 1964, compared with 317 million in 1959. But they are diverting more land to soil conserving uses. In 1964 cultivated summer fallow, soil improvement crops, and idle cropland occupied 25 mil-

lion more acres than in 1959.

If the need ever arose, much of the cropland presently in soil conserving uses, as well as some of that in pasture, could be shifted back into crop production.

Besides this, the Nation has about 200 million acres of land in grass and trees that could be used for crops. Many of these acres, however, would require clearing, draining, or other improvements. Moreover, much of this land is so isolated or in such small tracts that it is uneconomical to use.

However, if all this land were developed for cultivation, our Nation's cropland base would total more than 600 million acres, compared with the 335 million used for crops in 1964.

water makes land work

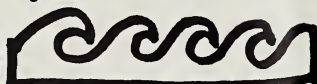
Rainfall 4,700 million acre-feet



2,350 million acre-feet
Evaporated or transpired
by plants



1,350 million acre-feet
Runoff into streams, lakes,
or ground



130 million
acre-feet
Withdrawn for
irrigation

217 million
acre-feet
Withdrawn for all
other uses

It takes water to make land produce. Approximately 4,700 million acre-feet of water (rain, snow, sleet, or hail) fall on the United States each year. About 70 percent of this water is evaporated or used by plants through the process of transpiration. Out of this comes the largest agricultural water use—nonirrigated crop, pasture, and forest production.

Only about 1,350 million acre-feet of the water that falls each year are available for diversion from streams and for replenishing ground water supplies. Man withdrew about 347 million acre-feet of this total in 1965—roughly 37 percent of which was for irrigation.

Irrigation water has made a big difference to U.S. farmers—particularly in the West.

Irrigated acreage has grown from less than 8 million acres at the turn of the century to more than 37 million in 1964. Ninety percent of our irrigated acreage is in the 17 Western States.

Irrigated farmland used primarily for pasture or harvested livestock feeds accounted for roughly three-fifths of the West's irrigated acreage in 1964. This irrigated land has played a significant role in stabilizing the western livestock industry by providing a dependable feed base that permits more effective use of extensive pasture areas. Yields per acre are up to 10 times higher on irrigated pasture in the West than on nonirrigated pasture. Irrigation has also benefited the West's crop producers by boosting yields sharply over those on nonirrigated cropland. (7)

The grain elevator rising high on the horizon is a mute symbol of our surplus. What is happening to the storage industry now that the traditional surpluses have gone?

To a traveler, the huge grain elevators that dot the American plains seem changeless monuments to our agricultural affluence.

Actually, the status of these massive storage depots in the farm economy has changed considerably in recent years.

For one thing, our grain surpluses—the original reason for building many of the elevators—have diminished.

And for another, improved transportation facilities allow the farmer to bypass intermediate grain storage if he thinks it to his advantage.

Country elevators—still the backbone of the grain marketing system—have had to cede some of their business to subterminal and terminal elevators. And an intense competition has developed among all three types of grain storage facilities.

From 1939 to the early 1960's a great increase in off-farm sales of grain more than quadrupled the volume of business done by the average country elevator.

But at the same time, improved roads and larger trucks encouraged the bypassing of these rural repositories of grain.

As a result the number of country elevators fell off from 9,000 in 1939 to 7,656 in the early 1960's.

The low point was in 1958 when there were only 7,000 country elevators in the United States.

Country elevators: Cost conscious. Although there is much overlapping in the types of services, country elevators are generally defined as those located in rural areas receiving grain from the farmer and shipping it on to terminal elevators located in centers of grain trade.

PILLARS OF PLENTY



As the amount of government grain storage has declined, so has the income level of some country elevator operators.

To offset this, operators have taken the following steps:

—Shipped grain direct from elevator to processor or exporter.

—Developed their operations in order to classify as subterminal elevators, bypassing terminals altogether.

—Searched out new markets and tailored their shipments to suit the customer's individual needs and desires.

—Expanded operations to include the supplying of farm production needs such as fertilizers, pesticides, and seed.

Terminal elevators: Progress hurts. Terminal elevators receive most of their grain from country elevators and have little or no direct contact with the farmer.

In the 10-year period from 1948 to 1958, the number of terminal elevators in the United States went up from 400 to 690. But this was largely due to a reclassification of some country elevators as terminal type elevators.

While country elevators have sideline businesses to make up for lost government storage income, terminal elevators tend to limit themselves to handling and storage operations and therefore are hit harder by loss of government storage.

In addition, the development of subterminals which allow grain to bypass terminals—and also the increasing substitution of barge and truck transport for rail—have cut sharply into the profitability of some terminal elevators.

Subterminal elevators: Skip one step. Combining the functions of both country and terminal elevators, subterminal elevators receive grain direct from the farmer and ship it direct to the processor or exporter.

Thus, grain is handled one less time than if it was marketed first

through a country elevator and then through a terminal elevator.

Subterminal elevators are generally located away from metropolitan areas but they provide necessary marketing services formerly available only in terminal elevators.

Some subterminals are smaller than the largest country elevators, while others are larger than some terminals. One of the most noticeable changes in the grain marketing scene in recent years is the growth of subterminal elevators. Their rapid rise has been attributed to the growing competition within the industry and increased need to cut operating costs. (8)

What Price Storage?

When there is less grain available for storage, it costs more per bushel to store it. And grain elevator operators frequently must compete with one another for the privilege.

To discover exactly what it costs to store grain these days, the Economic Research Service sampled accounting records of 252 grain elevators from all parts of the United States.

In 1964/65 the book cost to handle and store grain in country elevators averaged 10.4 cents a bushel. This included 1 year's storage plus receiving by truck and shipping by rail. The cost ranged from an average of 9.2 cents in the South and East to 12.0 cents in the Great Lakes area.

The combined cost of handling and storing grain at inland terminal elevators averaged 9.0 cents per bushel for the United States—ranging from 8.0 cents in the Great Lakes area to 11.6 cents in the West.

At port terminal elevators the book cost, including storage, rail, and water shipment, averaged 9.3 cents per bushel.

For all plants combined, the average cost of receiving grain by truck was 1.4 cents per bushel, with country elevators showing an average of 2.1 cents and inland and port terminal elevators 1.1 cents. (10)

Storage Capacity: Change For Grain Stays Mainly in the Plain

When you are the world's biggest producer of grains and demand for them grows heavier every year, you can expect your grain marketing system to creak and groan a bit under the weight.

And this is just what's happened in the United States.

Larger farms, new harvesting methods, improved distribution and transportation of grains, increased exports, and government programs have brought about a minor revolution in grain marketing.

Some of the more noticeable changes include both farm and industry mergers, integration of production and marketing operations, and liquidation of old businesses along with the creation of new ones.

One result of these changes over the past 8 years has been a 9-percent increase in off-farm commercial grain storage capacity.

Commercial storage capacity rose from 4,993 million bushels on January 1, 1961, to 5,446 million bushels on the same date in 1968.

Two States—Texas and Kansas—continued to rank first and second respectively, among all others in storage capacity. Combined, they accounted for about 30 percent of the national capacity during the 8-year period.

The North Central Region, which accounts for about three-fifths of the total off-farm storage, has shown a slight decrease.

In 1967, commercial grain storage continued to go up in parts of the Corn Belt and in the South Atlantic and South Central Regions, and several Western States. Significant drops were registered in Kansas, Texas, Oklahoma, Nebraska, and the North Atlantic Region. (9)



japanese menu: 1980

The selection of foods available to tomorrow's Japan will depend on the decisions made today about agricultural policies. Three possible options are explored here.

Key word in today's Japanese vocabulary is "growth." It means a livelier economy, greater buying power, and heavier demands for food and consumer products.

It also means that Japan is facing a possibly severe food problem in the next decade—where to get the supplies to meet the heavier demand for food. There are alternative solutions to the problem. The eventual solution will depend greatly on the policies chosen by the Japanese government, which effectively manages much of the nation's domestic and imported food supply.

Economists in ERS recently investigated the possibilities of three optional policies which Japan might follow.

The Western option aims to approximate Western food consumption with an energy target of 3,000 calories per person per day by the early 1980's. To move up to this level, Japan would:

- Expand livestock production sharply, greatly increasing imports of feed grains and soybeans.

- Make larger purchases of foreign wheat.

- Stabilize producer rice prices and raise consumer prices for rice.

- Increase sugar imports.

- Keep meat prices below those for fish.

- Expand fruit and vegetable production slightly.

The Pacific option would expand Japan's trade with Southeast Asia, South America, and Africa. The energy target is 2,900 calories per capita per day.

To move in this direction, Japan would:

- Expand livestock production and feed grain imports slowly.

- Invest in the production of corn and sorghums in Southeast Asia, turning there first for imports.

- Boost its imports of meat and livestock products from Pacific countries.

- Increase outputs of fish and fish flour.

- Expand fruit and vegetable production rapidly.

- Establish free trade in rice and increase rice imports.

- Stabilize imports of wheat.

The Oriental option protects Japan's own agricultural and fishing interests and minimizes its dependency on agricultural im-

ports. The target would be 2,800 calories daily.

To hold consumption at this level, Japan would:

- Expand livestock production slowly.

- Expand production of fish and fish flour and restrict meat imports thus letting fish prices undercut meat at retail.

- Expand fruit and vegetable production.

- Maximize domestic rice production.

- Control wheat imports.

Of these three options, the Western would bring the greatest increase in food supplies with the least increase in cost to consumers. The reverse would be true under the Oriental option. And the Pacific option falls somewhere between.

Under the Western option Japan's rate of dependency on food imports would be about 61 percent. Under the Oriental option it would be only 37 percent. With the Pacific option, it would be about 49 percent.

Japan has the power to channel its agricultural trade in many ways. Policy choices leading to such different degrees of import dependency would have differing effects not only on Japan's economy but on America's too. (11)

Trade and Development Are Goals Of Africa's Regional Organizations

Five associations to foster African trade and development now traverse the African continent to strengthen the economic relations of member states.

Associated Overseas Countries (AOC). Eighteen former colonies and U.N. Trust Territories of France, Belgium, and Italy comprise the African Associated Overseas Countries of the European Economic Community (EEC).

Forerunners of the AOC were the colonial preference systems—the Franc Zone systems in particular.

The first Convention of Association, devised at the Treaty of Rome in 1957, replaced the protected market these 18 colonies enjoyed in France with a larger market in all six EEC countries—which would share the cost of development aid.

The second Convention of Association was signed at Yaounde, Cameroon, in July 1963. It extended the African states' association with the Common Market until 1969. It also set up a timetable for gradual elimination of price-supported markets in the AOC. And it provided for pledges of \$730 million by the EEC to aid in this period of transition and in further development of the AOC.

Under the agreement on trade preferences, the AOC has benefited from successive tariff reductions in the intra-EEC trade, and several EEC duties on tropical products of the AOC have been abolished.

In return, African states of the AOC—except non-Franc Zone countries of Burundi, Congo (Kinshasa), Rwanda, and Somali Republic—grant preferential treatment to EEC exports.

Most of the Franc Zone AOC

MEMBERSHIP OF INDEPENDENT AFRICAN COUNTRIES IN MULTILATERAL TRADE AND DEVELOPMENT ASSOCIATIONS

Country	EEC- Associated Overseas Countries (AOC)	West African Customs Union (UDEAO)	Central African Customs and Economic Union (UDEAC)	British Common- wealth	East African Community (EAC)
Botswana				X	
Burundi	X				
Cameroon	X		X		
Central African Rep.	X		X		
Chad	X		X		
Congo (Brazzaville)	X		X		
Congo (Kinshasa)	X				
Dahomey	X	X			
Gabon	X		X		
Gambia				X	
Ghana				X	
Ivory Coast	X	X			
Kenya	*			X	X
Lesotho				X	
Malagasy Republic	X				
Malawi				X	
Mali	X	X			
Mauritania	X	X			
Mauritius				X	
Niger	X	X			
Nigeria	*			X	
Rwanda	X				
Senegal	X	X			
Sierra Leone				X	
Somali Republic	X				
South Africa, Rep. of				*	
Swaziland				X	
Tanzania	*			X	X
Togo	X				
Uganda	*			X	X
Upper Volta	X	X			
Zambia				X	

* See text for explanation of affiliation.

members also belong to either of two smaller development groups—the West African Customs Union (UDEAO) or the Central African Customs and Economic Union (UDEAC).

West African Customs Union (UDEAO). In 1959, seven former members of the French West African Federation formed the West African Customs Union.

The UDEAO customs duty for French and Franc Zone com-

modities is zero, and goods from the other five EEC members receive a 40-percent reduction in duty.

Two UDEAO members, the Ivory Coast and Mauritania, grant duty exemptions on goods from all EEC and AOC members.

Central African Customs and Economic Union (UDEAC). In 1959 four former members of French Equatorial Africa formed the Equatorial African Customs

AFRICA



Union. This attempt at regional cooperation endured, and Cameroon later became a fifth member. The organization was succeeded by the UDEAC in 1966.

The UDEAC set up a common external tariff, but exempted EEC members, African Franc Zone countries, and Algeria.

The UDEAC treaty provides for the coordination of development investment and fiscal regulation among its members.

Two Franc Zone AOC members, the Malagasy Republic and Togo, do not belong to either UDEAO or UDEAC. Still, Malagasy's customs duty for EEC and Franc Zone commodities is zero, and Togo grants preferential treatment to EEC members. Algeria, on the other hand, does not belong to either the AOC or any Franc Zone customs union, but it does extend tariff preferences to the EEC.

African members of the British Commonwealth. Thirteen African nations are members of the British Commonwealth. And a fourteenth, the Republic of South Africa, maintains a working relationship with the group.

African members of the Commonwealth receive tariff concessions from the United Kingdom and other members of the Commonwealth. But only two African members—Gambia and Malawi—grant tariff preference to goods from non-African member countries.

The Republic of South Africa, having strong bilateral trade agreements, withdrew from the Commonwealth in 1961 but continues to give and receive certain Commonwealth preferences.

In July 1966, Nigeria, already a member of the British Commonwealth, signed the Lagos Agreement of Association with the EEC. The agreement, while not yet ratified by all member countries, provides for entry of Nigerian exports to the EEC at the

internal tariff rate, subject to certain quotas.

East African Community (EAC). The Commonwealth countries of Kenya, Tanzania, and Uganda formed the East African Community, a customs union, in 1967. The EAC combines the former East African Common Market and the East African Common Services Organization.

The EAC has a common external tariff, with virtually free trade between members. However, a member may impose a transfer tax on specified manufactured goods from either of the other two countries to correct a trade deficit.

While retaining their Commonwealth ties, the EAC in July of this year signed an agreement of association with the EEC in Arusha, Tanzania.

The "Arusha Agreement," yet to be ratified, provides that East African exports to the EEC will generally receive the same treatment accorded to EEC members.

However, to prevent possible damage to the trade of the Yao-unde Associates (AOC), the agreement limits duty-free entry of coffee and cloves from East Africa to a quantity based on the average EEC imports of these products in the past 3 years. (12)

Farm Products Loom Large In South African Trade Prospects

South Africa may be considered the favored tip of a continent.

Blessed with a wide range of climate—from "temperate" in the Transvaal to "mediterranean" in the Southwest and "near tropical" in the Northeast—the Republic of South Africa is able to produce a wide variety of crops.

Geographic location (in the Southern Hemisphere) with direct access to shipping routes, and

a harvest season early in the year also afford a favorable advantage in world trade.

As a result, South African crops compete with U.S. farm products at major international markets—and at a time when prices are at their seasonal high.

But periodic droughts, infertile soils, and harsh unseasonable weather also plague large parts of South Africa. It is difficult, therefore, for the Republic to establish itself as a reliable year-to-year supplier or customer of specific farm products on the world market.

At present, South Africa exports corn, deciduous and citrus fruits, and peanuts, and imports wheat, rice, and cotton. Projections for these commodities are listed below.

Corn is South Africa's most important agricultural commodity in value, volume of production and consumption, and area planted.

Domestic corn consumption averaged 4.0 million short tons (about 450 pounds per capita) in the early 1960's, on an average production of 5.2 million short tons.

Corn has been and will continue to be a major export crop. It is estimated that corn exports will more than double from the average 1.7 million short tons in 1960-65 to over 3.8 million tons by 1975.

Wheat is South Africa's second most important grain crop. Though production increased more than 150 percent in two decades, consumption has also increased, and imports are usually needed to supplement domestic production.

In the 1970's consumption is expected to further outstrip production and force almost a tripling of annual wheat imports—from 209,000 short tons in the 1960-65 period to 565,000 tons by 1975.

South Africa produces only

about 3 percent (roughly 2,000 tons) of its rice needs and future production is expected to remain near the same level. Therefore imports are expected to more than double by 1970 from the 1960-65 average of 58,000 tons and triple by 1975 to meet the increasing demand.

Deciduous fruits earn about 10 percent of the foreign exchange gained by South Africa from agricultural products. And canning,

in turn, is an important part of the deciduous fruit industry (about two-third of the peaches and nine-tenths of the apricots are canning varieties).

Only about 10 percent of the South African canned fruit is sold for domestic consumption; the remainder is exported. It is projected that by 1975 deciduous fruit exports will almost double their 1960-65 volume of 142,000 tons annually.

Citrus fruits rank third in South Africa's exports. The citrus industry is geared to the export market, where growers receive about seven times the amount received for a like quantity of citrus sold locally.

Fruit sold abroad commands high prices because of its quality and availability during Europe's winter season when prices are at their peak. Projection estimates indicate that citrus exports will almost double the 1960-65 average to 679,000 tons by 1975.

Exports of peanuts and sunflowerseed are less stable and difficult to project. The amount of peanuts used domestically for oil is predetermined by the size of the sunflowerseed crop—because the latter source is less expensive and South Africa fills internal oil requirements before making exports. In this situation, wide fluctuations occur annually in the export of peanuts and peanut oil, and they both draw lower than domestic prices in the export market.

Cotton holds an important place among South African imports.

Cotton production has risen some in the past 20 years, but consumption has jumped at a faster rate. This has forced a steady increase in imports. To keep pace with consumption, both domestic production and imports are expected to triple by 1975 from 1960-65 averages of 11,000 and 25,000 tons, respectively. (13)

Cape Clippings

The goat family of South Africa has been increasing its share of the world mohair market at a fast clip in recent years.

Mohair exports from the Republic of South Africa have doubled to over 15 million pounds in the past decade and are expected to reach nearly 20 million pounds by 1975. They now outweigh those of both Turkey and the United States—the only other producers and exporters of importance.

U.S. exports have ranged between 2.7 million pounds and 14.2 million pounds in recent years. Turkey's have slipped fairly steadily to around 7 million pounds.

Though U.S. herds (mainly in Texas) produce about 45 percent of the world's 60-million-pound mohair output, not much more than a third of our mohair is exported.

South African production comes to about 20 percent of world output, but only 3 percent is used at home and the rest is marketed abroad. Its quality is generally finer than that in Turkey, which produces about 25 percent of world output.

Because of mohair's high price (around 80 cents a pound, in contrast to less than 50 cents for ordinary wool), it is most marketable in relatively high income countries.

This is one reason that most of South Africa's mohair is exported.

The United Kingdom—world's largest importer and user of mohair—is the major market. Japan and Italy also buy sizable quantities. And together, these three countries take about 90 percent of South African mohair exports. (14)

Illinois Leads Field of States In Fiscal '68 Farm Export Returns

All our States are stockholders in the big business of exporting food and fiber produced on U.S. farms. But some have more shares than others and reap larger dividends.

Altogether, they divided up earnings of \$6,315 million from agricultural exports in fiscal 1968.

But over 60 percent of the pot was credited to the combined exports of the 16 States that make up three geographic regions: West North Central, East North Central, and West South Central. Eight of these States also ranked among the "Top 10" with the largest shares of 1967/68 farm exports. The leaders:

Illinois (\$585.3 million), Texas (\$551.2 million), California (\$413.3 million), Iowa (\$392.3 million), North Carolina (\$366.2 million), Kansas (\$296.0 million), Arkansas (\$254.8 million), Indiana (\$251.5 million), Nebraska (\$229.5 million), and Minnesota (\$226.3 million).

States with sizable shares of certain commodities included Florida and California, citrus; Washington, apples; Texas and Louisiana, rice; Minnesota and Wisconsin, dairy products; the Carolinas and Georgia, tobacco.

The total export volume was equivalent to crop output of 71 million acres—or 1 out of every 4 harvested.

Altogether 466 different farm commodities went to buyers in over 150 countries.

But wheat, feed grains, and soybeans made up over half the total value of the 1967/68 farm export basket. And nearly three-fourths of the export total went to 15 countries. The "Top 5" were Japan, Canada, India, the Netherlands, and the United Kingdom. Canada and the Netherlands include large amounts of transshipments. (15)

A STUDY OF INDUSTRY LOCATION USING MULTIPLE REGRESSION TECHNIQUES. R. C. Spiegelman, Stanford Research Institute, in cooperation with the Economic Research Service. AER-140.

This research was undertaken using a multiple regression model to serve one or more of the following purposes: (1) determine the factors associated with location of individual manufacturing industries; (2) project the spatial distribution of manufacturing industries; and (3) aid local development planners in evaluating employment potentials for their areas in specific manufacturing industries.

DAIRY STATISTICS 1960-67. Economic and Statistical Analysis Division. Stat. Bull. 430.

This publication succeeds and brings up to date Statistical Bulletin 303 released in February 1962. Together the publications offer a wide collection of economic information relating to the dairy industry and include a majority of the statistical series in most frequent use.

ARGENTINE AGRICULTURE: TRENDS IN PRODUCTION AND WORLD COMPETITION. J. N. Smith, Foreign Regional Analysis Division. ERS-Foreign 216.

General economic and agricultural developments in Argentina are reviewed and analyzed, with special reference to their relevance to U.S. agricultural production and trade.

WORLD TRADE IN SELECTED AGRICULTURAL COMMODITIES 1951-65. VOLUME V.—OILSEEDS, OIL NUTS, AND ANIMAL AND VEGETABLE OILS. A. B. Mackie, T. E. Full, and J. E. Falck, Foreign Development and Trade Division, FAER-47.

World trade in oilseeds, oil nuts, and animal and vegetable oils—valued at \$3.1 billion, or about 7.9 percent of world agri-



RECENT PUBLICATIONS

The publications listed here are issued by the Economic Research Service and cooperatively by the State universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained only by writing to the issuing agencies of the respective States.

cultural trade, in 1964—increased in 1965 to \$3.3 billion, or 8.5 percent. The largest export crop, oilseeds and oil nuts, represented about \$1.5 billion; vegetable oils, \$975 million; and animal oils and fats, \$532 million.

ECONOMIC AND OPERATIONAL CHARACTERISTICS OF CATTLE RANCHES: TEXAS HIGH PLAINS AND ROLLING PLAINS. C. C. Boykin, Farm Production Economics Division. Texas A&M Agr. Expt. Sta. MP-866.

Specific objectives of this study were: (1) to identify homogeneous ranching areas; (2) to determine the most common ranch resource situations within each ranching area according to size, land use, cattle system and management; (3) to compute investment, costs, and income for the various ranch resource situations; and (4) to identify factors as-

sociated with differences in ranch income.

ENTERPRISE COSTS AND RETURNS ON RICE FARMS IN THE DELTA, ARKANSAS. T. Mullins and W. R. Grant, Farm Production Economics Division, in cooperation with Arkansas Agricultural Experiment Station. Ark. Agr. Expt. Sta. Rept. Ser. 170.

The enterprise budgets in this report cover per acre labor, power, and machinery requirements; monthly labor distributions; and costs and returns for rice, soybeans, oats, wheat, corn, and cotton.

AVAILABILITY AND USE OF HEALTH SERVICES: RURAL-URBAN COMPARISON. M. Krakowski, M. Werboff, and B. Hoffnar, Economic Development Division. AER-139.

The supply of personnel in health occupations is lower on a per capita basis in rural areas than in urban areas. This may be a reflection of population sparsity or the concentration of lower incomes, both of which would contribute to the lack of support for specialized medical personnel and facilities in rural areas.

FARM AND OFF-FARM INCOME REPORTED ON FEDERAL TAX RETURNS. E. I. Reinsel, Farm Production Economics Division. ERS-383.

The specific objective of this study is to determine the amount of income from various sources received by individuals who derive some of their income from farming. The emphasis is on individual, not farm, income.

FLUID MILK MARKETS: NUMBER OF HANDLERS AND MARKET SHARES, 1960-65. A. C. Manchester, Marketing Economics Division. Stat. Bull. 428.

This analysis of individual markets is designed for use by researchers, regulatory agencies,

and members of the milk industry. It supersedes "Market Shares in Fluid Milk Markets," and updates previously published data to December 1965.

CHANGES IN EEC IMPORTS OF COMMODITIES AFFECTED BY THE VARIABLE LEVY SYSTEM. O. H. Goolsby. Foreign Development and Trade Division. ERS-For. 225.

The methodology in this report differs from that in previous reports on changes in imports by analyzing trade in terms of market shares, as well as quantity, and by comparing trade in these terms to changes (trends) occurring in the prior decade. This methodology takes into account the dynamic nature of trade flows more fully than an analysis based solely on annual averages.

MINIMUM LAND REQUIREMENTS TO PRODUCE \$5,000 NET FARM INCOME, EASTERN PIEDMONT AND UPPER COASTAL PLAIN (ECONOMIC AREAS SIX AND E), NORTH CAROLINA. J. G. Sutherland, Farm Production Economics Division, in cooperation with North Carolina Agricultural Experiment Station. N. C. Agr. Expt. Sta. EIR-8.

Conclusions reached in this study are based on specified cotton prices, yields, and allotments when wages, land values, and operator equity are at specified levels. The study also estimates what the total number of farms in the area would be if all smaller farms were consolidated into units of the necessary minimum size to produce the requisite net farm income.

CROP YIELD RESPONSE TO FERTILIZER IN THE UNITED STATES. D. B. Ibach, Farm Production Economics Division, and J. R. Adams, Agricultural Research Service. Stat. Bull. 431.

Estimates presented in this publication were formulated in

order to supply one basis for current appraisals of the economic position of fertilizer use and to project economic potentials for fertilizer use and crop yields. The estimates show crop yield responses to fertilizer in defined areas.

Out of the Lab

Oblong tomatoes that fit into the "hands" of mechanical harvesters. Plants that detect air pollution. Reliable crabgrass killers. Flame resistant fabrics. Snow pillows. Low-calorie cheese.

Case histories of these dramatic research achievements — and many more—are featured in the 1968 Yearbook of Agriculture, *Science for Better Living*, published by USDA on October 20.

The Yearbook covers the broad field of agricultural research that "improves the meals we eat, the clothes we wear, our water and air, the wood we build much of our homes with, and the plants and trees that make our surroundings more livable."

Most of the chapters were written by scientists who work in labs at USDA or other government agencies, at universities, or in private industry.

Emphasis is on research developments in the last 5 years or so, though a few older landmark achievements are also included.

The Yearbook is distributed mainly by members of Congress. Copies are for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. Price is \$3.00.

AGRICULTURAL PRODUCTION AND TRADE OF PUERTO RICO. J. D. McAlpine, Foreign Regional Analysis Division. ERS-For. 227.

Over 90 percent of Puerto Rico's agricultural export and import trade is with the United States. This report analyzes recent developments in Puerto Rico's general economy, and trends and prospects in the consumption and production as well as trade.

CORPORATIONS HAVING AGRICULTURAL OPERATIONS: A PRELIMINARY REPORT. W. H. Scofield and G. W. Coffman, Farm Production Economics Division. AER-142.

This preliminary report summarizes results of a recent ERS survey of the number, kinds, and general characteristics of corporations that were directly involved in the production of farm products. For the 22 States covered in this report, corporate units represented less than 1 percent of all commercial farms in these States and about 7 percent of the land in farms. Total gross sales of farm products from all corporations were estimated at slightly less than \$1 billion in 1967—or about 4 percent of the total cash receipts from farm marketings in the 22 States.

MARKETING SPREADS FOR WHITE BREAD. Marketing Economics Division. Misc. Pub.-1091.

This publication shows the changes in white bread prices, spreads, and costs from 1947 through 1967. Bread prices have increased in each of the last 21 years, except in 1964, when the average price was the same as in 1963.

EFFECTS OF ECONOMIC OPPORTUNITY LOANS ON LOBSTER FISHERMEN IN MAINE, 1965-67. J. Bowring, D. Steward, and R. Bird, Economic Development Division, AER-136.

Economic Opportunity loans to lobster fishermen of Hancock and Washington Counties, Maine, averaged \$1,918 in 1965. The funds were used primarily for the purchase or repair of boats and other equipment. Only a small part was used for construction or repairs to buildings.

AGRICULTURAL POLICIES IN EUROPE AND THE SOVIET UNION. Europe and Soviet Union Branch, For. Reg. Anal. Div. FAER-46.

Agricultural policies in these areas have changed considerably during the 1960's. In reviewing these changes, along with forces operative for many years, emphasis is on policies likely to affect the level or composition of agricultural production in Europe and the USSR, or on U.S. agricultural exports.

ECONOMIES OF SIZE IN MINNESOTA DAIRY FARMING. B. M. Buxton, Farm Production Economics Division, and H. R. Jensen, Minnesota Agricultural Experiment Station. Minn. Agr. Expt. Sta. Bull. 488.

The approach in this study was to construct or synthesize on paper 60 dairy farm situations—largest of which is a 4-man operation. The relationship between size and unit cost is identified by the longrun unit cost.

REQUIREMENTS FOR AND COSTS OF PRODUCING AND COMPETING CROPS WITH ALTERNATIVE TECHNIQUES, UPPER COASTAL PLAIN, SOUTH CAROLINA. B. H. Robinson and C. P. Butler, Farm Production Economics Division. AE-312.

The general objective of this report is to present information useful to individual farmers and agricultural planners in making decisions that involve alternative methods of producing different crops.

THE BALANCE SHEET OF AGRICULTURE, 1967. P. T. Allen and others, Farm Production Economics Division. AIB-329.

The 1967 balance sheet in general estimates that the total value of assets used in farming has increased about fivefold since 1940. Farm real estate accounted for about two-thirds of the nearly \$270 billion of assets employed in farming on Jan. 1, 1967. Financial assets accounted for less than one-tenth, and other physical assets (largely machinery, motor vehicles, and livestock) for the remaining one-fourth of total assets. The relative importance of these three groups of assets has not changed much during the past 25 years.

THE STRUCTURE OF FLUID MILK MARKETS: TWO DECADES OF CHANGE. A. C. Manchester, Marketing Economics Division. AER-137.

This study updates and extends previous research work reported in "Nature of Competition in Fluid Milk Markets—Market Organization and Concentration." (AER-67).

Further research now underway will relate the aspects of market structure analyzed in this report to market performance—to the flow of economic results in terms of prices, marketing margins, and innovations in marketing fluid milk.

EMPLOYMENT IN APPALACHIA: TRENDS AND PROSPECTS. T. E.

Fuller, Economic Development Division. AER-134.

In examining the current economic plight of Appalachia—where employment has not kept pace with the Nation—attention is focused on manufacturing. This industry and its sales of goods to the "outside world" appear to hold the greatest potential for growth in Appalachia.

THE REPUBLIC OF SOUTH AFRICA'S AGRICULTURAL TRADE: PROJECTIONS TO 1970 AND 1975. R. E. Kampe, Foreign Regional Analysis Division. ERS-For. 236.

As an agricultural exporter, South Africa competes with the United States in the same major world markets. In some commodity areas—such as fresh and canned fruits—this competition can be expected to stiffen. Projections of production, consumption, and exports of all South Africa's major farm products are given in this summary of a more detailed research study.

POPULATION CHARACTERISTICS OF FARM OPERATOR HOUSEHOLDS. J. M. Zimmer and E. S. Manny, Economic Development Division. AER-141.

Selected characteristics of persons in U.S. farm operator households are analyzed in relation to the 1964 farm operator level-of-living index. These characteristics include age, color, sex, education level, and size of farm business in terms of gross sales.

Numbers in parentheses at end of stories refer to sources listed below:

1. E. I. Reinsel, Farm and Off-Farm Income Reported on Federal Tax Returns, ERS-383 (P); 2. Farm Production Economics Division, Farm Costs and Returns: Commercial Farms by Type, Size, and Location, Agr. Inf. Bull. 230, Rev. '68 (P); 3. The Dairy Situation, DS-322 (P); 4. J. G. Stovall, Changing Resource Requirements on Farms in the South (S); 5. R. D. Krenz (SM); 6. V. D. Wiser, Improving Maryland Agriculture, 1840-1860, (M); 7. H. T. Frey, O. E. Krause, and C. Dickason, Major Uses of Land and Water in the United States With Special Reference to Agriculture: Summary for 1964 (M); 8, 9, & 10. C. J. Vosloh, Jr., Changes in the U.S. Grain Marketing and Flour Milling Industry (S); 11. J. R. Barse, Japan's 1965 Macro-Diet and Future Options (M); 12. Africa and Middle East Branch, Foreign Regional Analysis Division, Agricultural

Policies in Africa and West Asia (M); 13 & 14. R. E. Kampe, The Republic of South Africa's Agricultural Trade: Projections to 1970 and 1975, ERS-For. 236 (P); 15. D. Rahe and I. Lemon, "U.S. Agricultural Export Shares by Regions and States, Fiscal Year 1968," For. Agr. Trade, November '68 (P); 16. Fruit Situation, TFS-168 (P); 17. Livestock and Meat Situation, LMS-163 (P).

*Speech (S); published report (P); unpublished manuscript (M); special material (SM); *State publications may be obtained only by writing to the experiment station or university cited.*

ECONOMIC TRENDS

ITEM	UNIT OR BASE PERIOD	'57-'59 AVERAGE	1967		1968		
			YEAR	SEPTEMBER	JULY	AUGUST	SEPTEMBER
Prices:							
Prices received by farmers	1910-14 = 100	242	253	253	260	261	267
Crops	1910-14 = 100	223	224	218	221	226	230
Livestock and products	1910-14 = 100	258	277	283	294	291	299
Prices paid, interest, taxes and wage rates	1910-14 = 100	293	342	343	355	354	356
Family living items	1910-14 = 100	286	322	323	336	337	339
Production items	1910-14 = 100	262	287	287	293	291	292
Parity ratio		83	74	74	73	74	75
Wholesale prices, all commodities	1957-59 = 100	—	106.1	106.2	109.1	108.7	109.1
Industrial commodities	1957-59 = 100	—	106.3	106.5	108.8	108.9	109.2
Farm products	1957-59 = 100	—	99.7	98.4	103.9	101.4	102.7
Processed foods and feeds	1957-59 = 100	—	111.7	112.7	115.9	114.9	115.4
Consumer price index, all items	1957-59 = 100	—	116.3	117.1	121.5	121.9	—
Food	1957-59 = 100	—	115.2	115.9	120.0	120.5	—
Farm Food Market Basket: ¹							
Retail cost	Dollars	983	1,081	1,088	1,124	1,132	—
Farm value	Dollars	388	413	418	450	438	—
Farm-retail spread	Dollars	595	668	670	674	694	—
Farmers' share of retail cost	Percent	39	38	38	40	39	—
Farm Income: ⁷							
Volume of farm marketings	1957-59 = 100	—	124	133	126	133	133
Cash receipts from farm marketings	Million dollars	32,247	42,788	3,845	3,562	3,763	4,000
Crops	Million dollars	13,766	18,383	1,698	1,476	1,579	1,800
Livestock and products	Million dollars	18,481	24,405	2,147	2,086	2,184	2,200
Realized gross income ²	Billion dollars	—	49.1	49.2	—	—	51.6
Farm production expenses ²	Billion dollars	—	34.8	35.0	—	—	36.2
Realized net income ²	Billion dollars	—	14.2	14.2	—	—	15.4
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	[*] 6,383	491	466	489	—
Agricultural imports	Million dollars	3,977	[*] 4,454	348	439	442	—
Land Values:							
Average value per acre	1957-59 = 100	—	⁴ 166	⁴ 160	⁵ 170	—	—
Total value of farm real estate	Billion dollars	—	⁴ 189.5	⁴ 182.5	⁵ 193.7	—	—
Gross National Product: ²							
Consumption ²	Billion dollars	457.4	789.7	795.3	—	—	870.8
Investment ²	Billion dollars	294.2	492.2	495.5	—	—	541.3
Government expenditures ²	Billion dollars	68.0	114.3	114.7	—	—	127.4
Net exports ²	Billion dollars	92.4	178.4	179.6	—	—	199.5
	Billion dollars	2.7	4.8	5.4	—	—	2.6
Income and Spending: ⁶							
Personal income, annual rate	Billion dollars	365.3	628.8	637.0	689.2	694.1	698.6
Total retail sales, monthly rate	Million dollars	17,098	—	—	28,814	29,115	29,042
Retail sales of food group, monthly rate	Million dollars	4,160	—	—	6,185	6,239	—
Employment and Wages: ⁶							
Total civilian employment	Millions	63.9	74.4	74.6	76.0	75.9	76.0
Agricultural	Millions	5.7	3.8	3.7	3.8	3.7	3.6
Rate of unemployment	Percent	5.8	3.8	4.1	3.7	3.5	3.6
Workweek in manufacturing	Hours	39.8	40.6	40.9	40.9	40.6	41.0
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	2.83	2.85	3.00	2.99	3.03
Industrial Production: ⁶							
	1957-59 = 100	—	158	157	166	164	163
Manufacturers' Shipments and Inventories: ⁶							
Total shipments, monthly rate	Million dollars	28,745	45,712	45,884	51,073	49,385	—
Total inventories, book value end of month	Million dollars	51,549	82,561	81,719	85,829	86,857	—
Total new orders, monthly rate	Million dollars	28,365	45,928	45,942	49,829	49,729	—

¹ Average annual quantities of farm food products purchased by urban wage-earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. ² Annual rates seasonally adjusted third quarter. ³ Preliminary. ⁴ As of November 1, 1967. ⁵ As of March 1, 1968. ⁶ Seasonally adjusted. ⁷ Annual and quarterly data are on 50-State basis; monthly data are on 48-State basis.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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Berry Bounty

There's nothing bogged down about the cranberry business, especially in Massachusetts. The State is the country's leading producer of the festive berry.

This year's crop in Massachusetts is expected to total 740,000 barrels—a 29-percent boost from last year's harvest.

Wisconsin, expecting 500,000 barrels, and Oregon will also have slightly larger harvests than in 1967.

New Jersey and Washington, the other producing States, are expecting a smaller output than last year's.

All told, when harvesting gets underway, the national cranberry crop is likely to total over 1.5 million barrels—11 percent over 1967—and plenty for holiday dinners.

About 79 percent of the berries are sold to processors—the rest are marketed as produce.

In 1967, the average American downed about a pound of cranberries, mostly in the form of jellies, juices, and relishes.

The sign of a good cranberry is lots of bounce. In fact, every American berry is bounce-tested before it is marketed. At one time, they were rolled down a series of steps. The good, firm berries bounced all the way to the bottom but soft ones stopped on the way.

The same principle is still used in today's grading machines. Berries bounce over several wooden barriers as they pass through the machine. The lively ones that pass the test are the ones that end up on holiday tables. (16)

THE FARM INDEX

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